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New data on spiders (Aranei) from southern part of the Khabarovsk Province

Новые данные о пауках (Aranei) юга Хабаровского края

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ABSTRACT. Material collected from the Ko Mountain (southern part of Khabarovsk Prov.) revealed 58 spider morphospecies. It was found that Ko Mt. is the northernmost locality for 4 species, earlier known only from the Maritime Province and is the northern limit of distribution for the Cybaeidae in continental Asia. In addition the studied locality is the southern limit of distribution for 8 species and one genus (*Tanasevitchia* Marusik et Saaristo, 1999). Six species, one genus (*Cybaeus* L. Koch, 1868) and one family (Cybaeidae) are new to the province. Four species are new to science and will be described in revisional works.

ABSTRACT. На основе материала собранного на горе Ко (юг Хабаровского края) было выявлено 58 морфовидов пауков. Показано, что гора Ко является самой северной точкой для 4 видов ранее известных только из Приморского края, а также для семейства Cybaeidae в континентальной Азии. Изученная вершина является также самой южной точкой ареала в распространении 8 видов и одного рода (*Tanasevitchia* Marusik et Saaristo, 1999). Шесть видов, один род (*Cybaeus* L. Koch, 1868) и одно семейство (Cybaeidae) являются новыми для Хабаровского края. Четыре вида новые для науки и будут описаны в обзорных работах.

Introduction

Spiders in the Khabarovsk Province have been unevenly studied. The more-completely studied areas include two reserves, the Bolshekhekhtsyrski and the Bureinski, for which there are detailed check-lists for all families [Trilikauskas, 2006; Marusik et al., 2007]. The Linyphiidae have been well surveyed within the Norsky Reserve [Tanasevitch, 2005] and some localities along the Amur River valley have been briefly studied [cf. Kim, Kurenshchikov, 1995]. About hundred species are known from the northern part of the province, along the shore of the Sea of Okhotsk [Marusik, 2005]. The southernmost parts of the Khabarovsk Province adjacent to the Maritime Province remain almost unstudied: only 17 species are known from Bikinski District and none from the others. In 2013 the senior author had opportunity to visit the Ko Mountain located in the south-eastern part of the Imeni Lazo District and to collect spiders in the foothills and on the mountain. The main goals of this paper are to comment upon the most interesting records and to describe the distribution of species along an altitudinal transect.

Material and methods

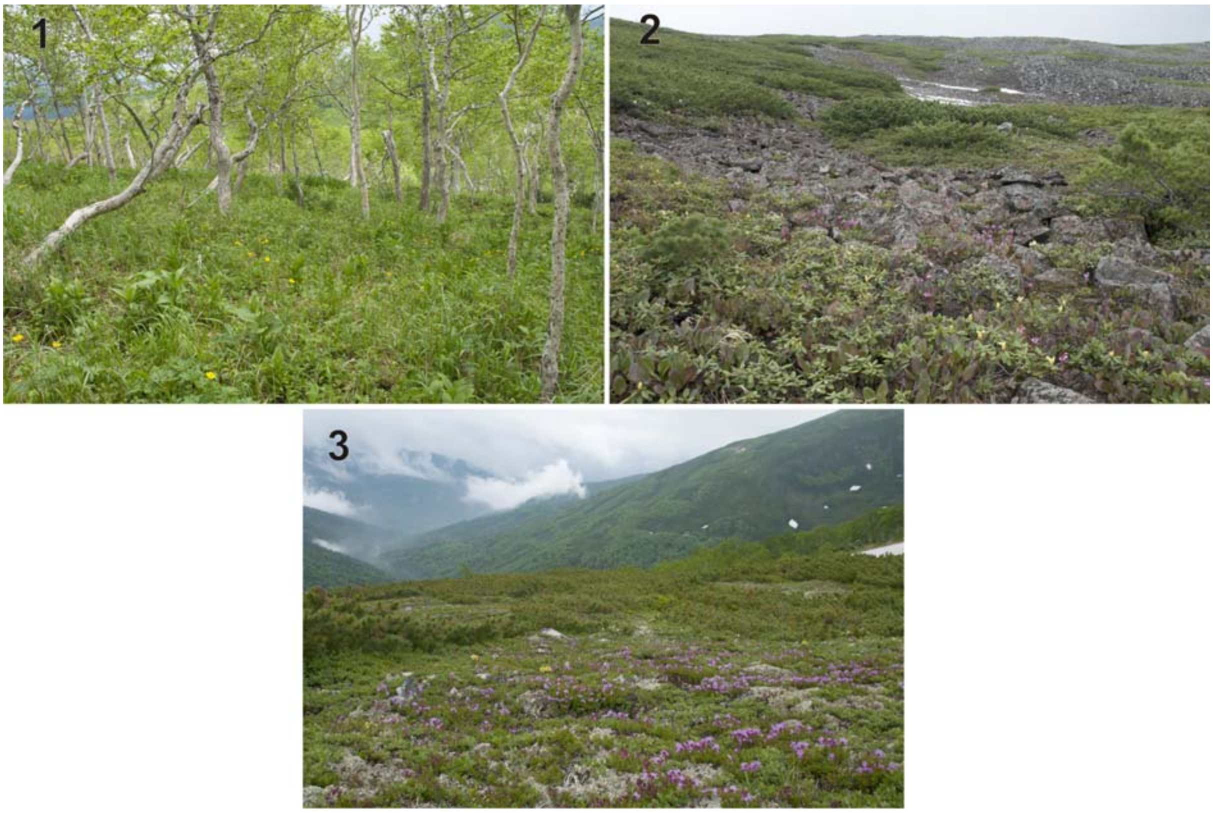
All spiders were collected by the senior author in the Ko Mt. (47°6′N 136°33′E, southern part of the Khabarovsk Province, Imeni Lazo District) in June 17–27, 2013. Material was collected chiefly by pitfall trapping and some by hand picking. Material was collected in the following habitats: 1) Forbs along the forest (from mixed to coniferous) road with some screes (550–1400 m), 2) Birch-woods (1400–1650 m) (Photo 1), 3) Mountain tundra (1700–1850 m) with screes (Photo 2) and with shrub vegetation (*Rhododendron, Pinus pumila*, etc., Photo 3). Screes are present in all three belts, but most common on the upper elevations.

Three marks were used to show distribution limits of some species: * southernmost locality in the range; ^



Map 1. A — Maritime and south part of the Khabarovsk Provinces; B — close up of south Part of Khabarovsk Province. Dot indicates position of the Ko Mt.

Карта 1. A — Приморский край и юг Хабаровского края; B — участок южной части Хабаровского края. Гора Ко показана точкой.



Photos 1–3. Habitats in the Ko Mt.

1 — birchwood; 2 — mountain screes in mountain tunda; 3 — mountain tundra.

Фото 1–3. Местообитания на горе Ко.

1 — высокогорные березняки; 2 — каменистые осыпи в зоне горных тундр; 3 — горная тундра.

northernmost locality in the range; [n] new for the province.

Species survey

Family ARANEIDAE

Aculepeira sp.

Comments. This species closely resembles *A. matsudae* Tanikawa, 1994 known only from the highlands of Hokkaido. Most probably it represents a new species. A female that is likely to belong to the same species has been reported from the Lazo Reserve [Oliger et al., 2002]. For certain identification it will be important to make comparisons with Japanese specimens and we intend to carry out such a study in the future.

Family CYBAEIDAE^[n]

Comments. This record of *Cybaeus* sp. from the Ko Mt. is the northernmost record for the genus and entire family for the continental part of Asia. The northern limit of the range in Asia overall lies about 2° latitude further to the north within Sakhalin Island [Marusik, Logunov, 1991] than in the Khabarovsk Province. This is the first record for this family from the Khabarovsk Province.

Cybaeus aff. confrantis Oliger, 1994^[n]

Comments. This is a new species which will be described in a special revision of the genus [Omelko, Marusik, in preparation].

Family GNAPHOSIDAE

Gnaphosa sticta Kulczyński, 1908

Comments. This is a North-Euro – Siberian species known south to the Maritime Province (Gorelaya Sopka Mt.) [Marusik, Koponen, 2000]. Within the Khabarovsk Province it has previously been recorded from the Bureinski Reserve [Trilikauskas, 2008a] and our record is therefore the southernmost for the province.

Micaria aenea Thorell, 1871*

Comments. This species has a circum-Holarctic range and is restricted to the boreal zone, and to hypoarctic and alpine communities. Within the Khabarovsk Province it has been recorded only from the Bureinski Reserve [Trilikauskas, 2008a]. The current record is the southernmost in the Palaearctic.

Micaria alpina L. Koch, 1872*

Comments. This species has a circum-Holarctic range and is restricted to the boreal zone, and to hypoarctic and alpine communities. Within the Khabarovsk Province it has been recorded from the Bureinski Reserve [Trilikauskas, 2008b] and the southern part of the Khabarovsk Province (unspecified locality) [Kurenshchikov, 1999]. The current record is the southernmost in the Palaearctic.

Zelotes puritanus Chamberlin, 1922*

Comments. This species has a circum-Holarctic range and is restricted to the boreal and nemoral zones and to alpine communities. Within the Khabarovsk Province it has previously been recorded from the Bureinski Reserve [Trilikauskas, 2008b]. The current record is the southernmost in the Palaearctic.

Zelotes sula Lowrie et Gertsch, 1955*[n]

Comments. This species has a Siberio-Nearctic range and is restricted to the boreal zone. It was previously unknown from the Khabarovsk Province and the current record is the southernmost in the Palaearctic.

Family LINYPHIIDAE

Tanasevitchia Marusik et Saaristo, 1999*

Comments. This is a small genus with only two species [Platnick, 2014]. Both occur in Siberia only. One species, *T. strandi* (Ermolaev, 1937) is restricted to Altai [Tanasevitch, 2008]. Another species is commented below.

Tanasevitchia uralensis (Tanasevitch, 1983)*

Figs 1–12.

Comments. This species has a Siberian range and is restricted to boreal and hypoarctic zones. Earlier this species and genus was recorded from about 52°N to the south [cf. Tanasevitch, 2008]. The current record is the southernmost in its range and extends the distribution of the species and genus about 6° of latitude to the south.

Because the somatic characters and the fine of structural details of the male palp and epigyne (median plate) were never properly illustrated we present here digital and SEM photographs showing the unusual shape of the male carapace (Figs. 1–2, 4–5); the very long cymbium (longer than tibia (Fig. 1) divided at its posterior end (Figs 3, 5, 7); the shape of the embolic division (Fig. 8) and the median plate of the epigyne (Fig. 10); the male leg I lacking tibial spines (Fig. 11) and the female leg I with spines (Fig. 12).

Family LYCOSIDAE

Acantholycosa aborigenica Zyuzin et Marusik, 1988

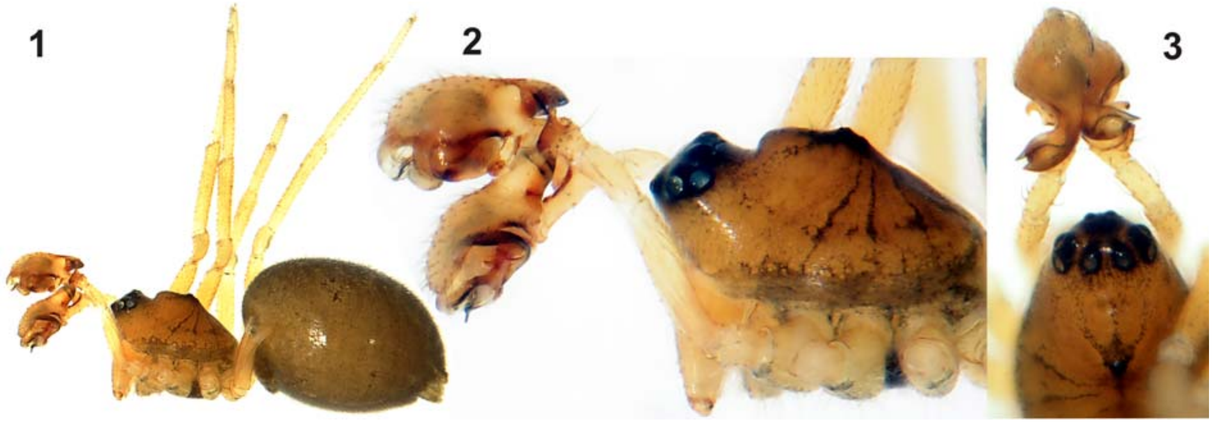
Comments. This species has previously been recorded from the northern part of the province [Trilikauskas, 2008a] and it is known from several localities in the Maritime Province [Marusik et al., 2003].

Alopecosa cf. *aculeata* (Clerck, 1757)

Comments. This is a new species which will be described in a special revision. We know this species from one locality in the northern part of Maritime Province.

Alopecosa hokkaidensis Tanaka, 1985

Comments. This species has previously been recorded within Russia from the Maritime Province



Figs 1–3. Male of *Tanasevitchia uralensis*. 1 — habitus, lateral; 2 — prosoma, lateral; 3 — prosoma, dorsal.

Рис. 1–3. Самец *Tanasevitchia uralensis*. 1 — внешний вид, латерально; 2 — головогрудь, латерально; 3 — головогрудь, дорзально.

[Marusik, Koponen, 2000] and Khabarovsk Province: Bolshekhekhtsyrskiy Reserve [Marusik et al., 2007]. It also occurs in northeastern China and Hokkaido.

Alopecosa moriutii Tanaka, 1985^n

Comments. This species has previously been recorded within Russia only from the Maritime Province [Marusik, Koponen, 2000]. It also occurs in Korea and Japan. The current record is first for the province and is the northernmost of its entire range.

Pardosa eiseni (Thorell, 1875)

Comments. It has a trans-Palearctic range and is restricted to boreal and hypoarctic zones. Within the Khabarovsk Province it has been recorded only from the Bureinski Reserve [Trilikauskas, 2008a].

Pardosa lyrata (Odenwall, 1901)

Comments. It has a Siberian range and is restricted to the boreal zone. Within the Khabarovsk Province has been recorded only from the Bureinski Reserve [Trilikauskas, 2008a].

Pardosa nordicolens Chamberlin et Ivie, 1947*

Comments. It has an East-Siberian – Northwest Nearctic range. Asian records are from the boreal zone, while most of Nearctic records are from the tundra [Dondale, Redner, 1990]. Within the Khabarovsk Province has been recorded only from the Bureinski Reserve [Trilikauskas, 2008a]. The current record is the southernmost of its entire range.

“*Sibirocosa*” sp.

Comments.This is a new species belonging to an undescribed genus related to *Sibirocosa* Marusik, Azarkina et Koponen, 2003 and will be described in a separate paper.

Family SALTICIDAE

Chalcoscirtus tanyae Logunov et Marusik, 1999^n

Comments. Previously this species has been recorded from two localities in the Maritime Province [Logunov, Marusik, 2000]. The new record extends known range over 3° to the North and represent the first record of the species in the Khabarovsk Province.

Family THOMISIDAE

Xysticus luctuosus (Blackwall, 1836)*n

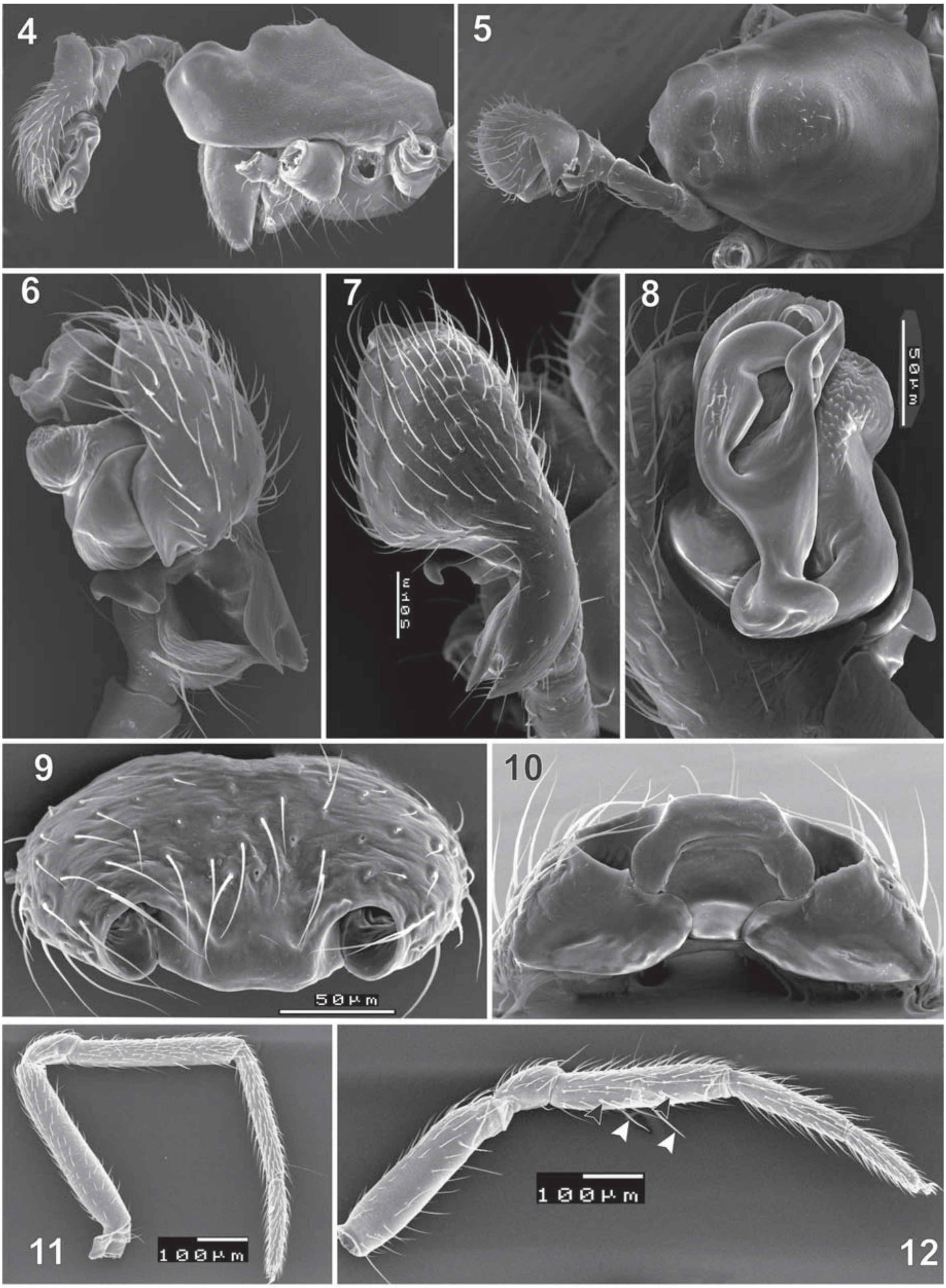
Comments. It has a circum-Holarctic range and is restricted to boreal and nemoral zones [Marusik et al., 2000]. This is the first record of this species from the Khabarovsk Province and is the southernmost for Asia.

Xysticus rugosus Buckle et Redner, 1964*

Comments. It has a Siberian – West Nearctic range and occurs among stones [Marusik et al., 2000]. Within the Khabarovsk Province it has previously been recorded only from the Bureinski Reserve [Trilikauskas, 2008b]. This current record is the southernmost in its entire range.

Discussion

Because material was collected during a short period and chiefly by pitfall traps it is impossible to make any detailed analysis of altitudinal distribution. However some conclusions can be made, especially in respect to the wandering species. Most of the species (48) were collected from lower elevations. The number of species found in the birch-woods and mountain tundra were almost the same (10 and 13, respectively). Only two species, *Acantholycosa norvegica* and “*Sibiricosa*” sp., were found through the whole transect. Both are restricted to scree habitats. Two species, *Evarcha proszynskii* and *Pardosa* cf. *lugubris,* are common



Figs 4–12. *Tanasevitchia uralensis*. 4–5 — male, prosoma lateral and dorsal; 6–8 — male palp, retrolateral, dorsal and prolateral; 9–10 — epigyne, ventral and caudal; 11 — male, leg I; 12 — female, leg I (arrows indicate tibial spines).

Рис. 4–12. *Tanasevitchia uralensis*. 4–5 — самец, головогрудь латерально и дорзально; 6–8 — пальпа самца, ретролатерально, дорзально и пролатерально; 9–10 — эпигина, вентрально и каудально; 11 — самец, нога I; 12 — самка, нога I (стрелки показывают шипы голени).

Table 1. Material collected and distribution of spiders among three altitudinal belts in the Ko Mt.
Табл. 1. Исследованный материал и распространение пауков по трем высотным поясам в на горе Ко.

Species \ Elevation, m	550–1400	1400–1650	1700–1850
Araneidae			
Aculepeira sp.			1♂
Hypsosinga sanquinea (C.L. Koch, 1844)	2♂♀		
Larinioides cornutus (Clerck, 1757)	1♂		
Clubionidae			
Clubiona irinae Mikhailov, 1991	2♂♂		
Clubiona kulczynskii Lessert, 1905	1♂		
Clubiona sp.	1♂		
Cybaeidae			
Cybaeus sp. aff. *confrantis* Oliger, 1994	1♂		
Gnaphosidae			
Callilepis schuszteri (Herman, 1879)	6♂♂1♀		
Drassodes cupreus (Blackwall, 1834)	2♂♂	1♂	
Gnaphosa sticta Kulczyński, 1908	47♂♂1♀	2♂♂	
Micaria aenea Thorell, 1871	1♂3♀♀		
Micaria alpina L. Koch, 1872	1♂2♀♀		
Micaria pulicaria (Sundevall, 1831)	2♂♀		
Zelotes puritanus Chamberlin, 1922	2♂♂2♀♀		
Zelotes sula Lowrie et Gertsch, 1955	1♂		
Linyphiidae			
Agyneta olivacea (Emerton, 1882)	4♂♂		
Agyneta sp.		3♂♂1♀	
Asperthorax borealis Ono et H. Saito, 2001	1♂		
Bathyphantes eumenis (L. Koch, 1879)	1♀		
Collinsia sp.	4♂♂		
Dicymbium yaginumai Eskov et Marusik, 1994	5♂♂		
Diplocephalus sp.	1♂		
Erigoninae gen.1 sp.1	1♂		
Erigoninae gen.2 sp.1	3♂♂		
Erigoninae gen.3 sp.1		1♂	
Lasiargus sp.	1♂		
Micrargus herbigradus (Blackwall, 1854)	1♂		
Nippononeta sp.	♂♂♀♀		
Pocadicnemis pumila (Blackwall, 1841)	7♂♀		
Tanasevitchia uralensis (Tanasevitch, 1983)	1♂	2♂♀	
Walckenaeria sp.1	1♀		
Walckenaeria sp.2		1♀	
Lycosidae			
Acantholycosa aborigenica Zyuzin et Marusik, 1988	7♂♂2♀♀	3♂♂1♀	
Acantholycosa lignaria (Clerck, 1757)	1♂	1♂	
Acantholycosa norvegica (Thorell, 1872)	2♂♂	4♂♂	7♂♂4♀♀
Alopecosa aculeata (Clerck, 1757)	6♂♂1♀		
Alopecosa cf. *aculeata* (Clerck, 1757)			1♀
Alopecosa hokkaidensis Tanaka, 1985			12♂♂3♀♀
Alopecosa moriutii Tanaka, 1985	10♂♂3♀♀	9♂♀	
Pardosa cf. *lugubris* (Walckenaer, 1802)	63♂♂9♀♀		2♂♂
Pardosa eiseni (Thorell, 1875)		39♂♀	4♂♂13♀♀
Pardosa lyrata (Odenwall, 1901*)*	1♂		

Table 1 (contituing)
Таблица 1 (продолжение)

Species \ Elevation, m	550–1400	1400–1650	1700–1850
Lycosidae			
Pardosa nordicolens Chamberlin et Ivie, 1947	1♀		
Pardosa plumipes (Thorell, 1875)	1♂		
Pardosa riparia (C.L. Koch, 1833)	4♂♂		
“*Sibirocosa*” sp.	1♂	1♂	24♂♂5♀♀
Xerolycosa nemoralis (Westring, 1861)	21♂♂1♀		
Phrurolithidae			
Phrurolithus festivus (C.L. Koch, 1835*)*	1♂		
Salticidae			
Chalcoscirtus tanyae Logunov et Marusik, 1999			3♂♂2♀♀
Evarcha proszynskii Logunov, Cutler et Marusik, 1993	1♀		1♂
Pellenes ignifrons (Grube, 1861)			1♀
Tetragnathidae			
Pachygnatha listeri Sundevall, 1830	1♂		
Thomisidae			
Ozyptila sincera Kulczyński, 1926	5♂♂		
Xysticus lepnevae Utotchkin, 1968	1♂		
Xysticus luctuosus (Blackwall, 1836)	10♂♂		
Xysticus rugosus Buckle et Redner, 1964			1♂
Zoridae			
Zora sp. 1	6♂♂2♀♀		
Zora sp.2	3♂♂2♀♀		
Total	48	10	13

for both lower and higher belts and absent from the birch-wood belt. One species was common to the birch-woods and mountain tundra, *Pardosa eiseni*. Five species were common in lower altitudes and birch-woods. There was little faunal similarity between neighboring birch-woods and mountain tundra belts and this could be because of striking differences between their physical habitats. In mountain tundra most of species are connected with stony screes.

Among the 58 morphospecies found in the Ko Mt. we do not know taxonomic status (not identified to species level) and/or distribution of 12 species. Of the 46 remaining species 10 are endemic to either the SE part of the Palaearctic or to the Maritime and Khabarovsk Provinces. It is most likely that the majority of the unidentified species are also endemics of the SE Palaearctic. Thus, about 1/3 of species collected in the studied area are likely endemic, which is a rather high proportion. Among the 10 endemic species whose range we know, seven occur in the mountain tundra. Considering that only 13 species were found there, the endemism in mountain tundra may be over 50%. Half of these endemic species belongs to the Lycosidae.

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